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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,941

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EXAMINER

JACKSON JR, JEROME

ART UNIT

PAPER NUMBER

2815

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,941	Applicant(s) ASANO ET AL.	
	Examiner Jerome Jackson Jr.	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 47-68, 70, 72, 73, 84, 85 and 87-93 is/are pending in the application.
- 4a) Of the above claim(s) 60-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 47-59, 63-68, 70, 72, 73, 84, 85 and 87-93 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/5/09</u> . | 6) <input type="checkbox"/> Other: _____ |

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 55-59 and 63-66 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation in claim 55 "so as to provide a Schottky junction between the first high impurity concentration region and the bonding pad" does not have original antecedent basis and is contrary to the original disclosure. First, a Schottky junction is by definition a junction between a metal and a material with a bandgap such as a semiconductor. There is no direct connection or "junction" between the bonding pad and the high impurity concentration region forming a Schottky junction. There can also be no "Schottky junction" between the first high impurity concentration region and the bonding pad as they are supposedly "not in contact" (claim 55 line 14). Also, in applicant's disclosure contact between a metal and the high concentration impurity regions are "ohmic". Contact between metals and low impurity or intrinsic semiconductor regions are "Schottky".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 55-59 and 63-66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For the reasons above, the claims are also vague and indefinite of exact structure. There cannot be "contact" (junction) and "not in contact". The intended structure is vague and indefinite.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 47-59 and 63-68,70,72,73,84,85,87-93 as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hatta 4,803,527 of record.

Newly amended claim 55 does not distinguish over Hatta disclosing in figures 1-4 a bonding pad 6 (BP) connected to a gate electrode 3; a protecting element comprising a first high concentration impurity concentration region 7A, a second high impurity concentration region 7, an insulation region (substrate semiconductor material 1) between 7A and 7, and wherein 7A is closer to (BP) 6 than 7, and wherein there is Schottky junction diode protection. See particularly figure 1 showing Schottky diodes D1 and D2 protecting the gates of the device and connecting "between" the gate bonding pad 6 and Vdd or GND. Other claims are rejected for dependence on claim 55.

Claim 67 also does not structurally distinguish over figure 1 of Hatta where 6(Vd) defines a "first bonding pad" "connected to" a "drain" of a transistor; a second bonding pad 6(BP) connected to gate electrode 3 of the same transistor; a "protecting element" connected between the first bonding pad and second bonding pad comprising a first high impurity concentration region 7(n+), a second high impurity concentration region 7A, and an insulating region (substrate material 1) between the two high impurity concentration regions; and wherein the device can function as claimed. Dependent claims are likewise rejected.

Claim 70 is rejected as 6(GND) defines a "third bonding pad", and there is also a similar n+-i-n+ protecting element between the second bonding pad and third bonding pad. See again figure 1 where substrate material 1 provides the insulating material between every (8 of them) high impurity n+ concentration regions 7(n+) and high impurity concentration region 7A (n+). Claim 70 and dependent claims are rejected.

Claims 84 and dependent claims are likewise rejected as there are multiple transistors and multiple protection devices in figure 1 of Hatta disclosing the claimed structure.

Note "bonding pads" are not considered to distinguish over the Vd or GND or other metallizations of Hatta defining by themselves "bonding pad" regions, or directly connected to bonding pads not shown but absolutely necessary for the device to be connected to proper voltages. There is no specific bonding pad structure claimed to structurally distinguish over the metallizations of Hatta arbitrarily labeled as "bonding pads". Note also n+ regions of Hatta are disposed along sides of bonding pads and metallizations. Therefore "protecting elements are also disposed along sides of bonding pads. Note also n+ regions of Hatta define resistive (or resistor) regions. The claims do not structurally distinguish over Hatta.

Applicant's arguments filed 12/12/08 have been fully considered but they are not persuasive. Arguments regarding a Schottky junction (or Schottky diode?) in addition to an "insulating" region, are not persuasive, as figure 1 of Hatta shows insulating material 1 between every n+ region, and also Schottky diode (D1 or D2) protection. There is clearly insulating material 1 and Schottky diodes between first 7A n+ and second 7 n+ regions.

Applicant's argument Hatta's resistor does not comprise n+ regions is wrong. The n+ regions are resistive regions and define resistors along with (or without) the insulating substrate material 1. Doped semiconductor regions (n+) are resistive and

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define broadly resistors or resistive regions. There are no specifically claimed resistor magnitudes or structures unequivocally distinguishing over Hatta.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerome Jackson Jr./
Primary Examiner, Art Unit 2815